Blick über den TEL.....lerrand

TEL europe • eu

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#Context #CELSTEC
#OpenUniversiteit
#researchGroup TEL

Centre for Learning Sciences and Technologies

Open Universiteit
celstec.org

World Map > Netherlands > Limburg > Welten

Open Universiteit Nederland, Bologna and Chiba building

Some Facts:

- 20.000 Students
- 60 Mio Budget
- 15 Study Centers

CELSTEC

- 120 fte, 7 Mio budget

Centre for Learning Sciences and Technologies

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Research Lines and topics

#1 Mobile and ubiquitous learning content
Ubiquitous access to learning support and distributed multi-format learning content.

– Mobile Video and Audio Content (Youtube EDU, iTunes U), Cloud-based learning content, Mobile data collection and aggregation, **eBooks and tablet content**.

#2 Orchestration of seamless learning support
Instructional design of nomadic and seamless learning support.

– Ubiquitous LMS access, Mixed Reality Games, Excursions and Field Trip systems, Mobile Augmented Reality, Mobile Learning Games, Object and location-based service access.

#3 Situated learning experiences
Connect the Learning and the real World, context-aware learning systems, sensor-based learning support.

– Experience sampling apps, Sensor-based learning apps, Situated and ambient displays, Context-aware social media, Tangible and smart-objects for learning

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Mobile Learning Applications Domains

- **eHealth and healthcare**
  EMURGENCY: performance support and notification system, Handover procedures, Reference apps for daily practice
- **Law and Management education**
  OpenScout, OUNL iPad pilots, UNHCR mobile simulated games
- **Architecture and creative industries**
  MACE location-based content and social media, Cloud-based cooperation methods in design and architecture
- **Cultural Heritage**
  Mixed reality field trips with Cultural Sciences
- **Logistics**
  SALOMO: Situation Awareness and Mobile data collection
- **Language learning**
  ELENA, PhD projects
- **Teacher education and networking**
  mobile social networking apps

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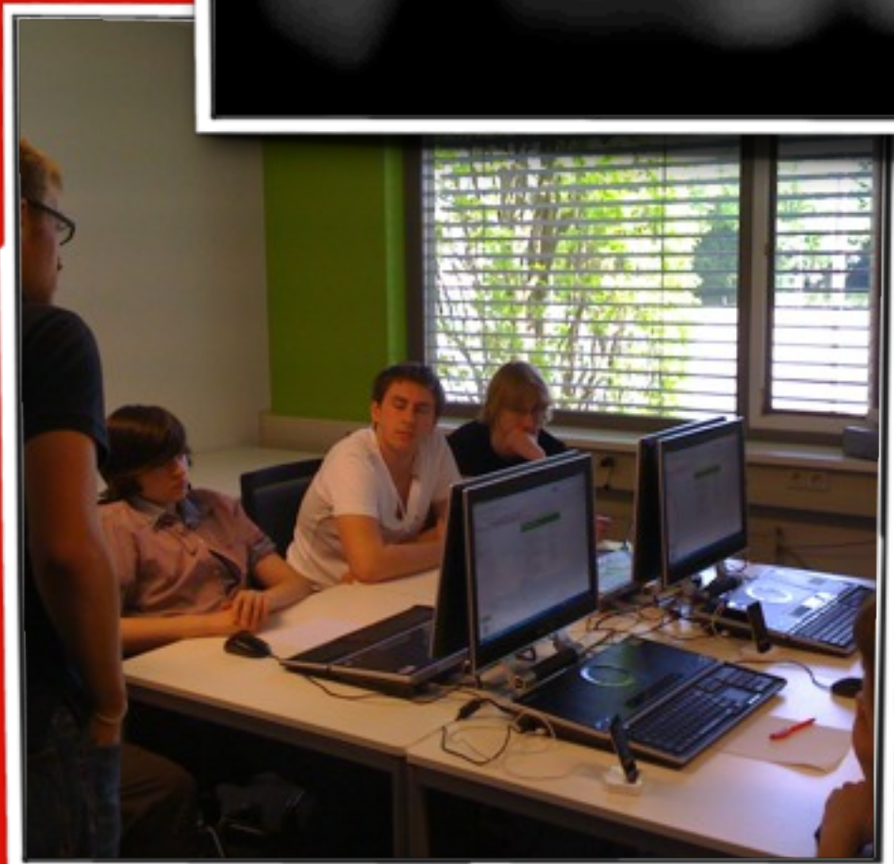
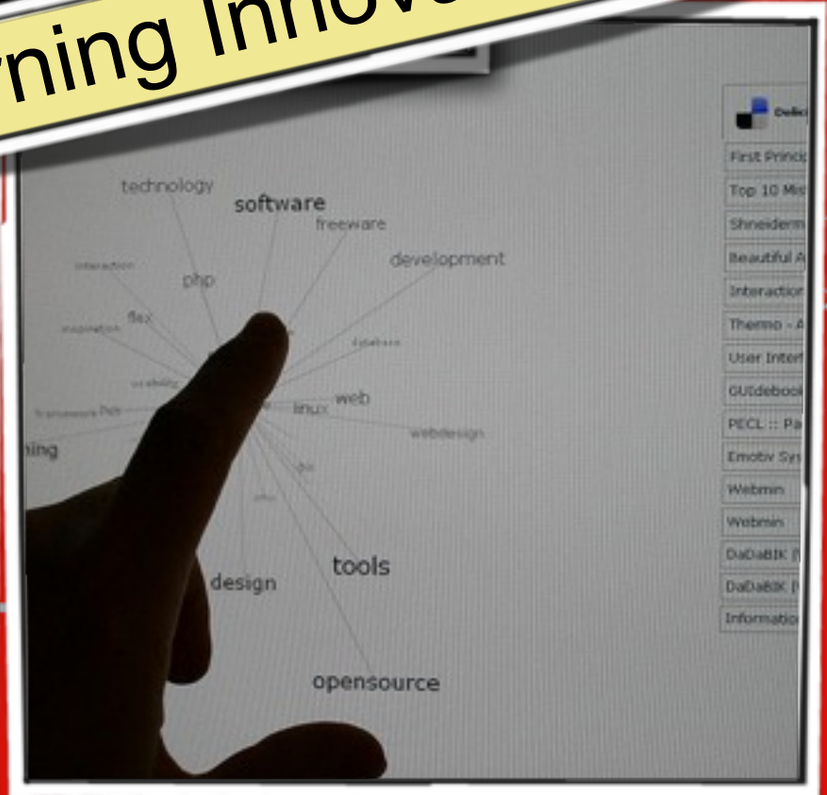
New media for learning and professional development

Learning Innovation Lab





Workshop Plan

- Trends and Technologies
- Discussion and Reflection
- Grand Challenges
-

#technologytrends #2009
#horizonreports

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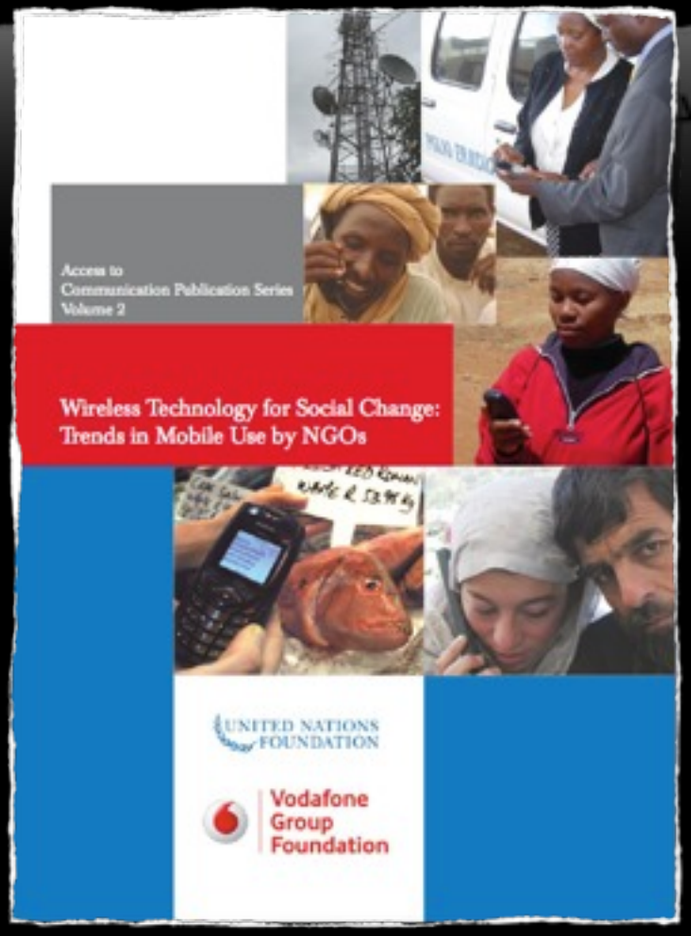
MOBILES

Time-to-Adoption Horizon: One Year or Less

The unprecedented evolution of mobiles continues to generate great interest. The idea of a single portable device that can make phone calls, take pictures, record audio and video, store data, music, and movies, and interact with the Internet — all of it — has become so interwoven into our lifestyles that it is now surprising to learn that someone does not carry one. As new devices continue to enter the market, new features and new capabilities are appearing at an accelerated pace. One recent feature — the ability to run third-party applications — represents a fundamental change in the way we regard mobiles and opens the door to myriad uses for education, entertainment, productivity, and social interaction.

#mobileaccess #mobiledata #experiencesampling

Each year **1.2 billion new phones**, Information can be accessed not only in city centres but much more important in **rural areas**, information will **grow even more rapidly**, mobile devices become more **context-aware**, new **user interfaces**



Mobile Access

"mobiles as universal tools for reading, discussion, documentation, annotation, and others learning activities."

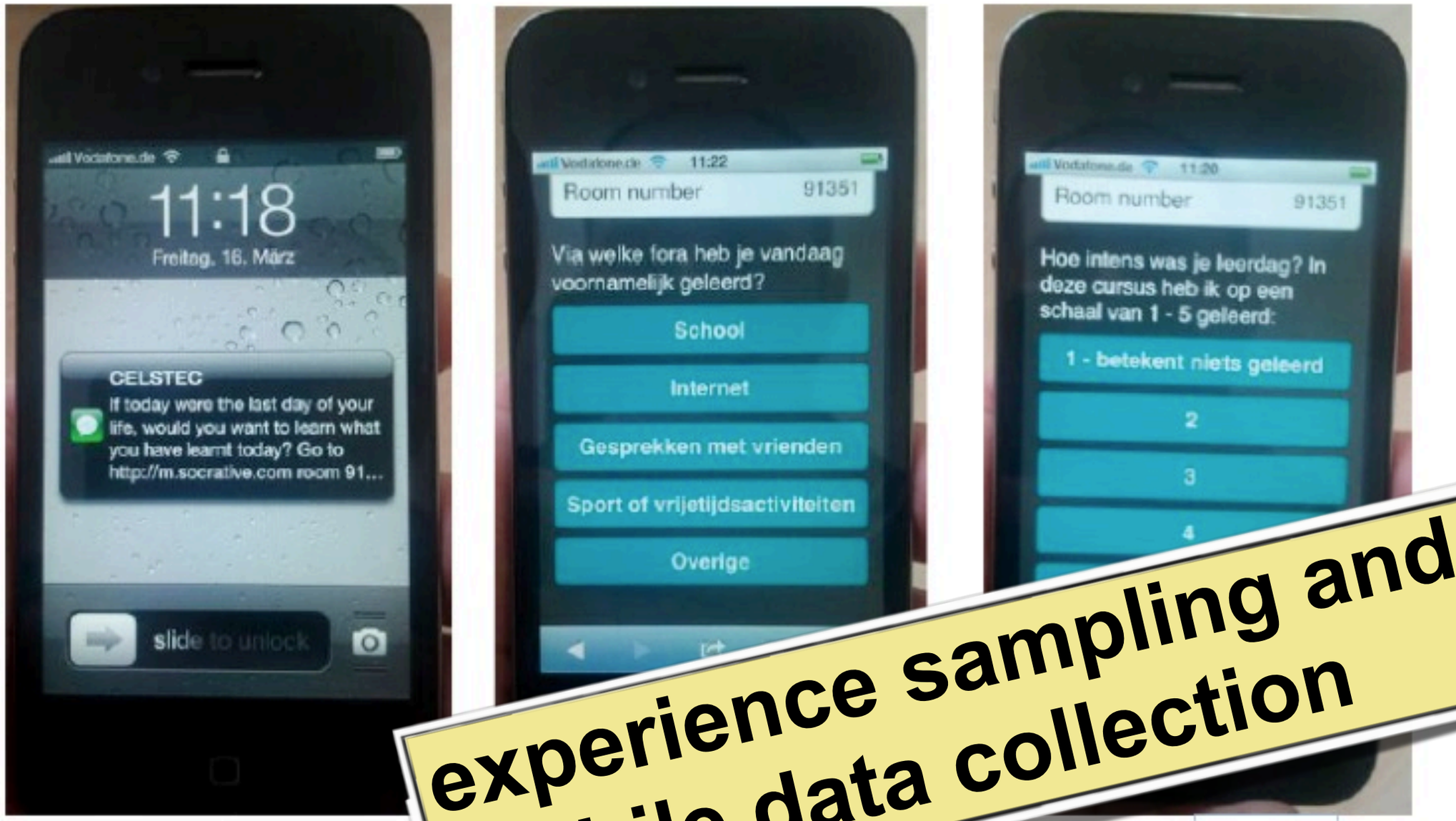
350.000 apps and growing.

Mooble LMS

LMS access

Glahn, C., & Specht, M. (2010). Embedding Moodle into Ubiquitous Computing Environments. In M. Montebello, et al. (Eds.), 9th World Conference on Mobile and Contextual Learning. October, 19-22, 2010, Valletta, Malta. http://hdl.handle.net/1820/2729

mobile RA

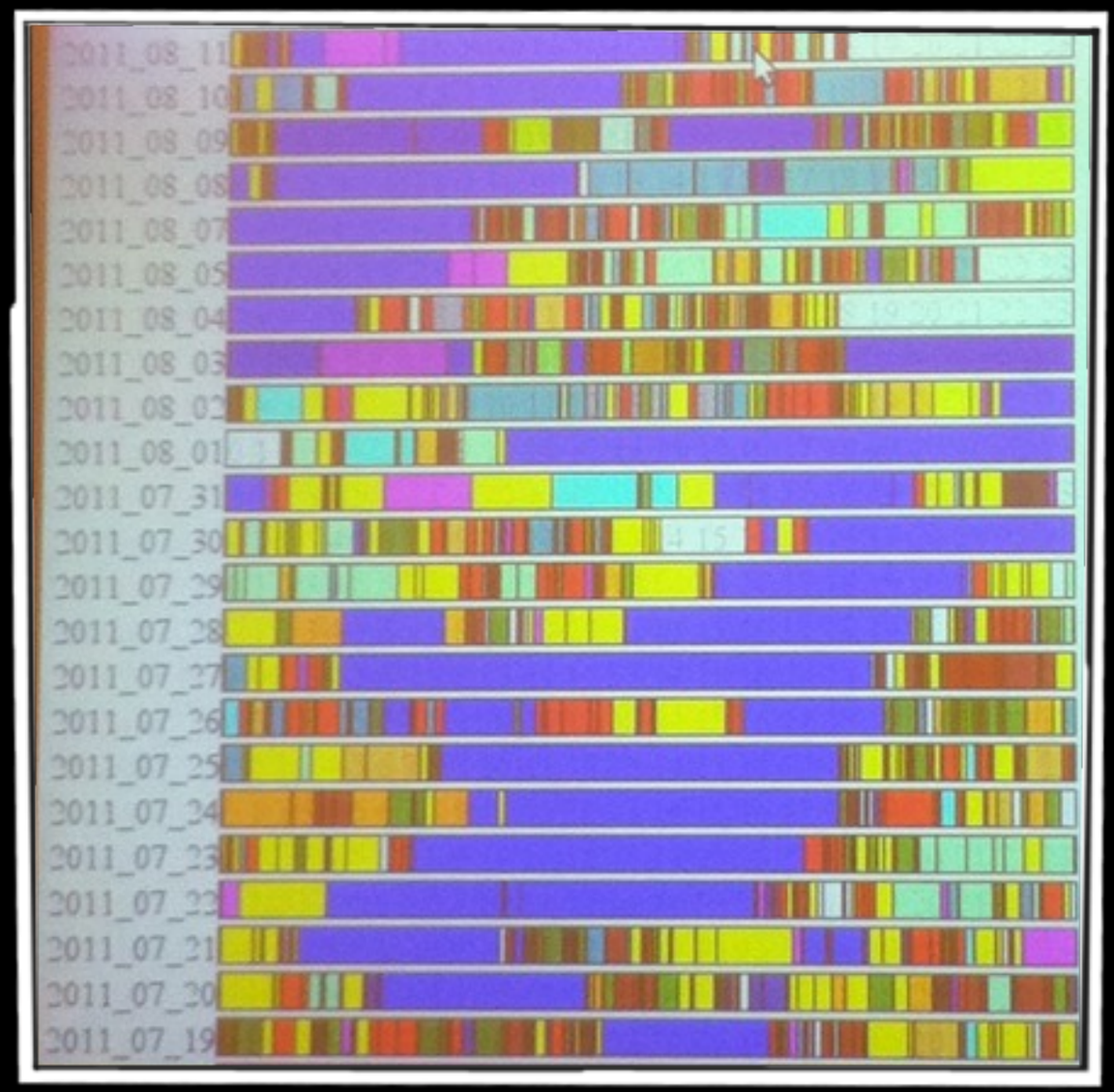


experience sampling and mobile data collection

Figure 8.2. Student reflective practice a. Daily SMS received by students. b. What were your main learning channels today? c. How intense was your learning day? Rate it from 1 to 5.

#sensordata #usertracking #feedback #loops

#sensor technology can record data in a scalable way.



http://quantifiedself.com/

#cloud technology can support seamless learning trajectories.

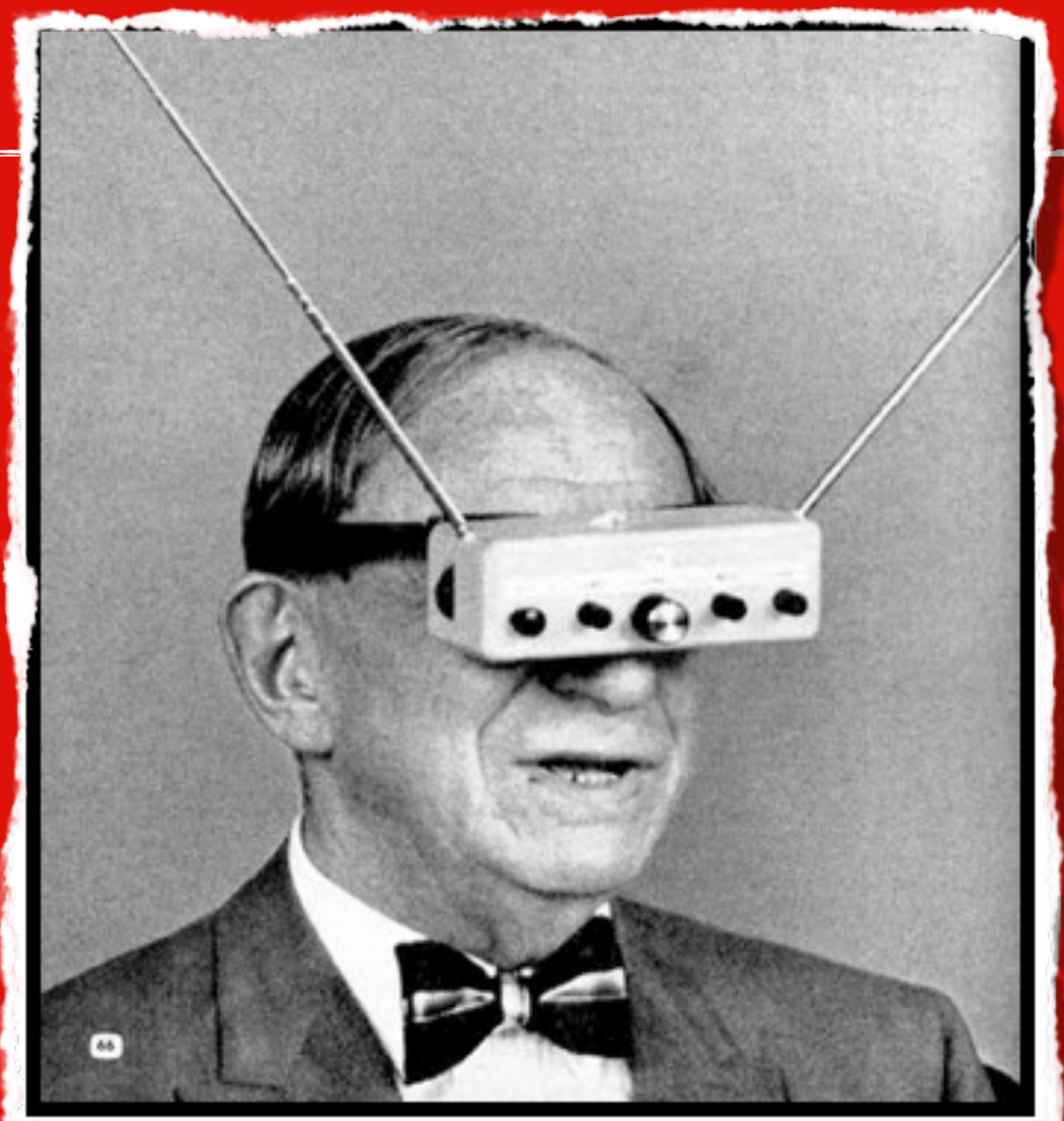
disappearing

Wong, L.-H., & Looi, C.-K. (2011). What Seams Do We Remove in Mobile Assisted Seamless Learning? A Critical Review of the Literature. *Computers & Education*, *57*(4), 2364-2381. Elsevier Ltd. doi:10.1016/j.compedu.2011.06.007

#display technology can create feedback loops ...

Goetz, T. (2011). Harnessing the Power of Feedback Loops | Magazine. *wired.com*. Retrieved August 22, 2011, from http://www.wired.com/magazine/2011/06/ff_feedbackloop/5/

#augmented #reality



Courtesy of "Window to The Future" door Steve Kosareff

#AR technology can augment your perception of a context ...

http://www.designbynotion.com/metamirror-next-generation-tv/

AUGMENTED (HYPER)REALITY

Interaction

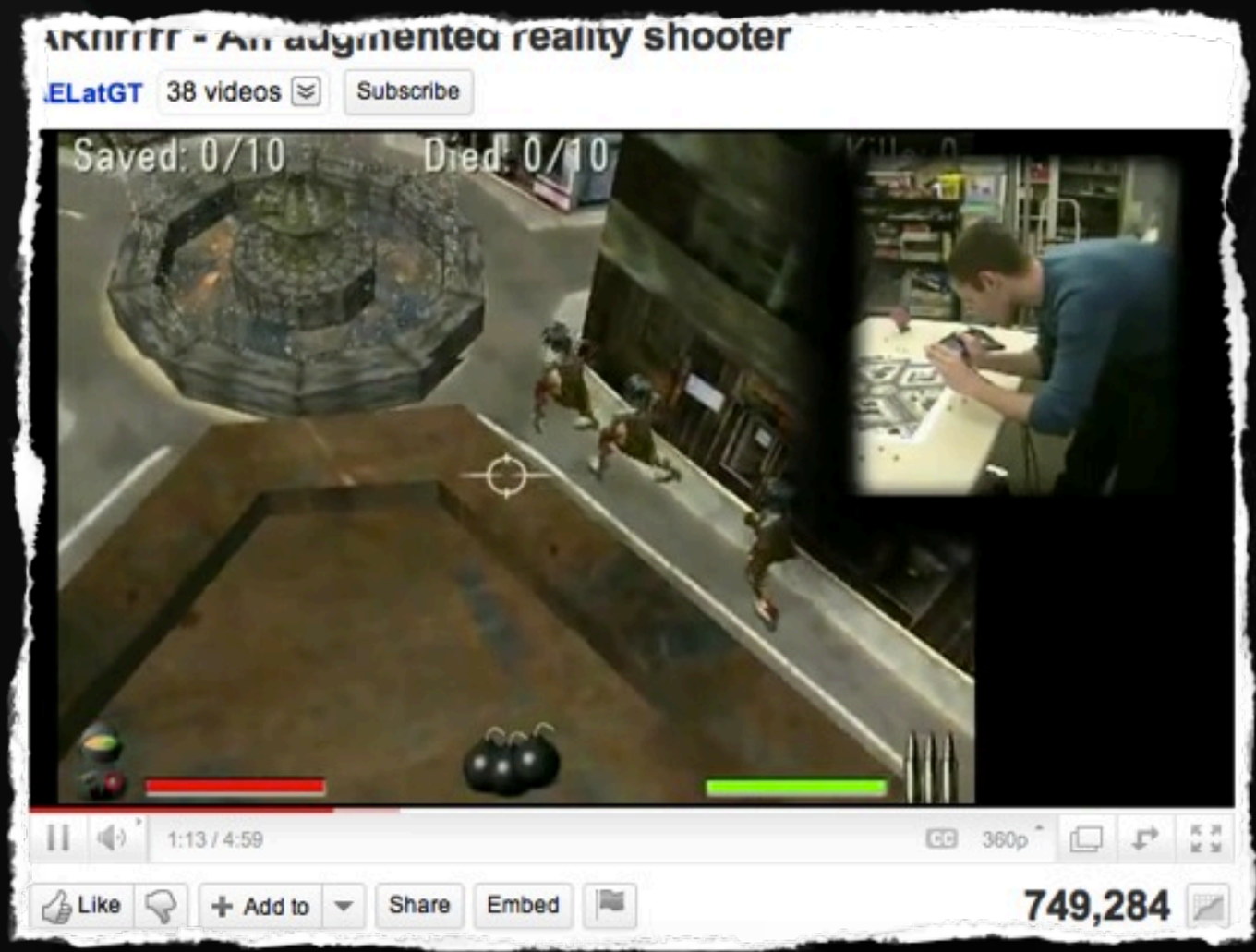
HCI Patterns

Tricorder

Interaction

HCI Patterns

Holo chess



Interaction

HCI Patterns

X-Ray Vision

#3 CELSTEC: leren in context

arlearn

http://code.google.com/p/arlearn/

- *Augmented Reality Games,*
- *Excursions,*
- *Mixed Reality Games,*
- *Mobile Games and Simulations.*

ARLearn Case studies

	Florence case	*Amsterdam case*	*Hostage case*
Game design	Scavenger game	Adventure game	Decision game
Delivery Channel	augmented reality	augmented virtuality	augmented reality
Pedagogic approach	situated learning	expository learning	learning through decision taking

#situated #ambientdisplays

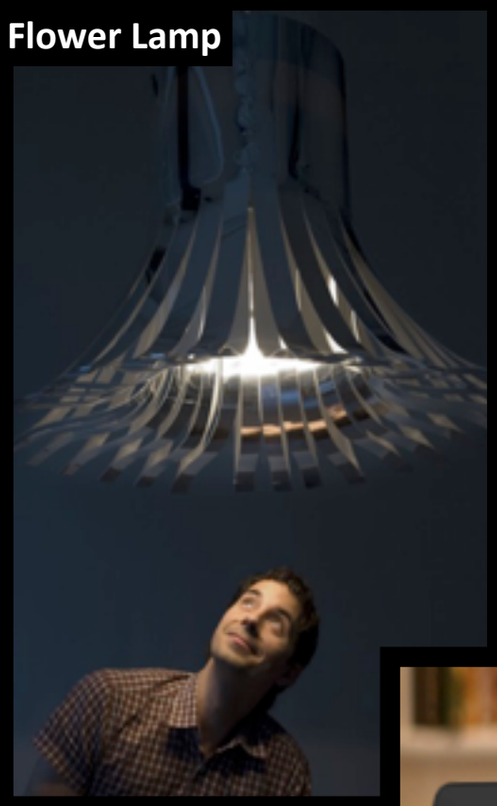
situated displays for awareness


Hello.Wall


EyeStop


Nuage Vert


Ambient Umbrella


Flower Lamp


UbiGreen


Power Aware Cord


Orb


BBC


Digital Retail

#display tech. can support awareness and reflection.

Fig. 1. The current prototype of *Reflect*

Bachour, K., Kaplan, F., & Dillenbourg, P. (2008). Reflect : An Interactive Table for Regulating Face-to-Face Collaborative Learning. *Technology*, 39-48. Retrieved from http://dx.doi.org/10.1007/978-3-540-87605-2_5

sensor infrastructure, power, Tags (NFC, QR), location, build in mobile

http://www.plugwise.com/

Energy Awareness

Rooms | Groups

- Coffee Machines
- Printers
- Gaming Consoles
- Workplaces
- Hot Desks
- Water Coolers

Appliance(s)

- Workstation 1.27 Door
- Workstation 1.27 Window
- Workstation 1.28 Door
- Workstation 1.28 Window
- Workstation 1.39
- Workstation 1.40 Door
- Workstation 1.40 Wind

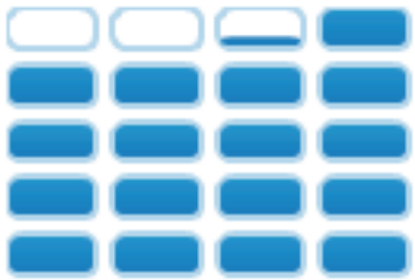
Current Usage
215 W

Hot Desks

Total Usage Today
0.91 kWh

Explore | Relate | Compare

Select a room/group or appliance to relate it's consumption.



3674 Campus²

548 Chiba²

6.7 Employee²

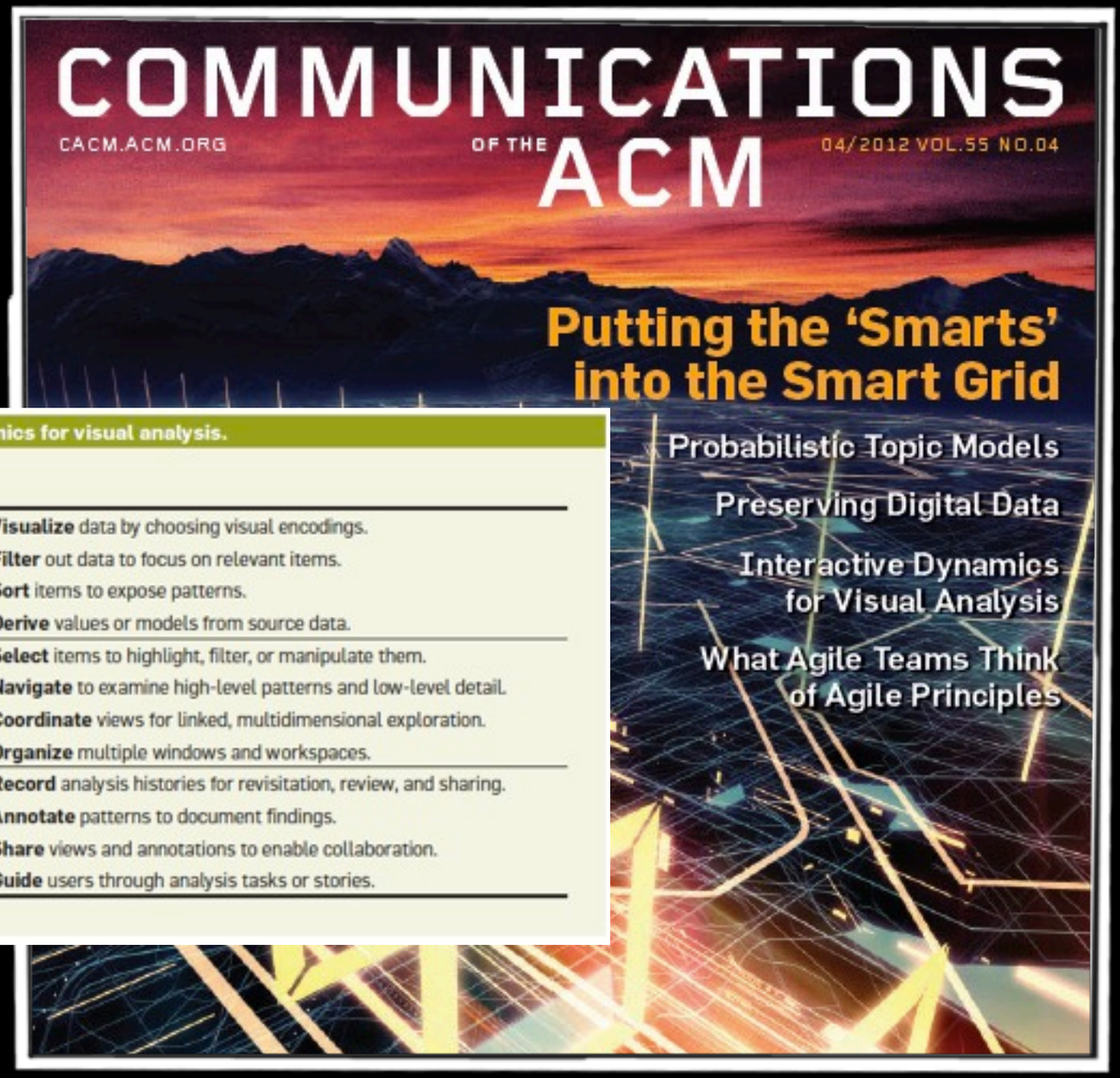
...total usage today in kWh.
...rday, based on the estimated total energy consumption February 2009 - February 2010, assuming 250 working days.

ambient and situated displays

Experiment 2

#visualisation #learning #analytics

#visualisation and LA can support personal sense making.



DOI:10.1145/2133806.2133821
Article development led by queue.acm.org

A taxonomy of tools that support the fluent and flexible use of visualizations.

BY JEFFREY HEER AND BEN SHNEIDERMAN

Interactive Dynamics for Visual Analysis

Taxonomy of interactive dynamics for visual analysis.

Data and View Specification	**Visualize** data by choosing visual encodings.
	Filter out data to focus on relevant items.
	Sort items to expose patterns.
	Derive values or models from source data.
View Manipulation	**Select** items to highlight, filter, or manipulate them.
	Navigate to examine high-level patterns and low-level detail.
	Coordinate views for linked, multidimensional exploration.
	Organize multiple windows and workspaces.
Process and Provenance	**Record** analysis histories for revisitation, review, and sharing.
	Annotate patterns to document findings.
	Share views and annotations to enable collaboration.
	Guide users through analysis tasks or stories.

Heer, J., Shneiderman, B. (2012). Interactive Dynamics for Visual Analysis. Communications of the ACM. Vol 55. No 04. pp. 45-54.

#effects
#visiblelearning

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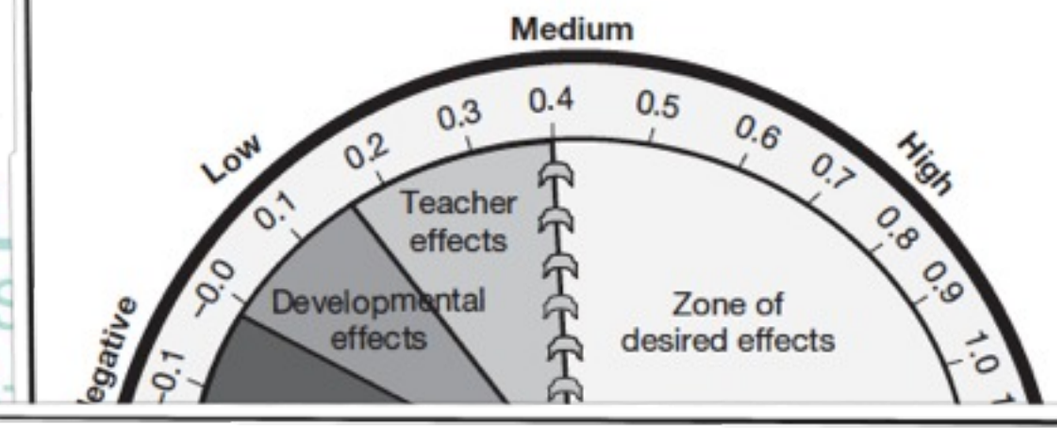
VISIBLE L
A SYNTHES
800 META-



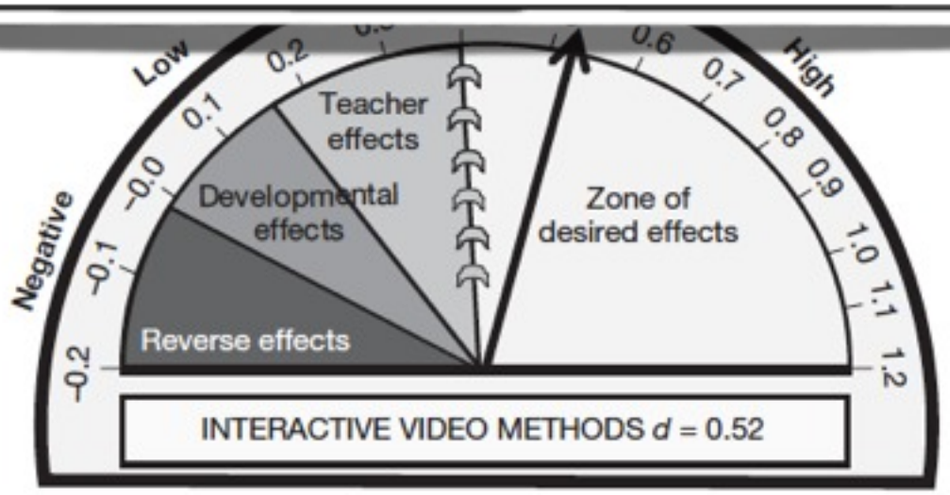
KEY	
Standard error	na
Rank	137th

000

Table 10.8 Summary of major uses of computers in classrooms

Method	*No. metas*	*No. effect sizes*	*d*
Tutorials	8	78	0.71
Programming	2	43	0.50
Word processing	2	47	0.42
Drill & practice	9	506	0.34
Simulations	5	94	0.34
Problem solving	7	197	0.26

JOHN HAT



KEY	
Standard error	0.076 (Medium)
Rank	44th
Number of meta-analyses	6
Number of studies	441
Number of effects	3,930
Number of people (1)	4,800

#Context
#STELLARNET

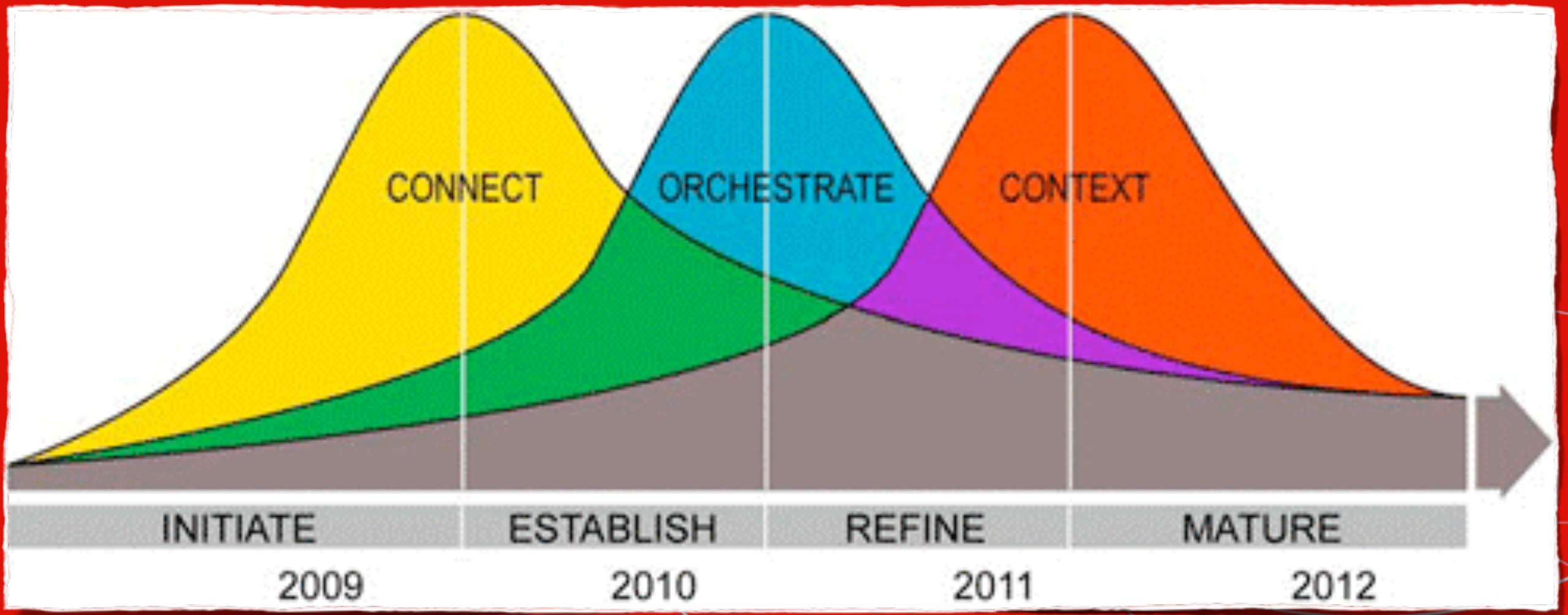
The grand challenge for technology enhanced learning

To unite the disjoint scientific communities with a virtual and distributed centre of excellence that expands the capacity of each research unit and that fits the "Grand Challenge" for the future of TEL, and that will be sustained though valuable instruments.

&
To connect with policy-makers to provide strategic direction
To reduce discipline and community fragmentation
To look beyond the Network partnership
+
Set a mid-term agenda
Increase interdisciplinary collaboration
Establish and institutionalise discourse and exchange
Increase international visibility

Peter Scott
Peter.Scott@STELLARnet.eu

The STELLAR GRAND Challenge Cluster Waves



The STELLAR Instruments and Communities

1. Leadership Capacity	A. STELLAR Meeting of Minds	Learning executives, policy makers, senior researchers	I. Communication Instruments STELLAR Open Archive & Mash
	B. STELLAR Podcasts	Integrative	
2. Researcher Capacity	C. STELLAR Theme Teams	Mid tier research staff	
	D. STELLAR Incubator Programme	Early stage researcher	
	E. STELLAR Rendezvous	Integrative	
3. Doctoral Academy Capacity	F. STELLAR Doctoral Consortium	Mid stage PhD	
	G. STELLAR Doctoral School	Early stage PhD	
4. Community Level Capacity	H. STELLAR Community Channels	Stakeholder Network	

Grand Challenge Problems in Technology Enhanced Learning

Prepared for STELLAR Big Meeting,
London 2012

Grand Challenges in TEL

Grand Challenge Topics

- ARV GCP1: Open Collaboration in Formal Education
- ARV GCP2: Technology-Supported Representation-Fitness
- ARV GCP3: Rich-Media Assignments
- ARV GCP4: Supporting an Open Culture of Design for TEL
- ARV GCP5: Multi-Level Evaluations of TEL
- ARV GCP6: Emotion-Adaptive TEL
- ARV GCP7: Assessment and Automated Feedback
- ARV GCP8: One Informed Tutor per Child
- ARV GCP9: Improving Educational Practices through Data-supported Information Systems
- ARV GCP10: Semiotic Recommender Systems for Learning
- ARV GCP11: Enhancing Learning with Improved Information Retrieval
- ARV GCP12: Open TEL Practices
- ARV GCP13: Learning Reading at Home
- ARV GCP14: Technology for Young Children's Expression of Scientific Ideas
- ARV GCP15: Evaluating Informal TEL
- ARV GCP16: Engaging the Brain's Reward System
- ARV GCP17: Drop-Out Prevention through Attrition Analytics
- ARV GCP18: New Forms of Assessment for Social TEL Environments
- ARV GCP19: Guidance for Technology Use in Early Years
- ARV GCP20: TEL Plasticity
- ARV GCP21: European TEL DataMart
- ARV GCP22: Open Research Methodology Infrastructure for CSCL
- Delphi GCP1: CSCL in teacher training and professional development
- Delphi GCP2: Mobile augmented reality in health care and medicine
- Delphi GCP3: Acquisition of graphical and digital literacies through teaching with ICTs
- Delphi GCP 4: Increasing student motivation to learn and engaging the disengaged
- Delphi GCP5: Bridging informal and formal contexts to create a unified learning landscape
- Delphi GCP 6: The 'perfect' Personalized Learning Environment

Alpine Rendevouz & JTELWS, JTELSS

Delphi Study

ARV GCP21: European TEL DataMart

ARV GCP20: TEL Plasticity

Delphi GCP2: Mobile augmented reality in health care and medicine

Delphi GCP1: CSCL teacher training and professional developm

ARV GCP11: Enhancing Learning with Improved Information Retrieval

ARV GCP13: Learning Reading at Home

ARV GCP4: Supporting an Open Culture of Design for TEL

ARV GCP12 Pract

ARV GCP22: Open Research Methodology Infrastructure for CSCL

ARV GCP5: Multi-Level Evaluations of TEL

ARV GCP6: Emotion-Adaptive TEL

ARV GCP2: Technology-Supported Representation-Fitness

ARV GCP17: Drop-Out Prevention through Attrition Analytics

Delphi GCP 6: The 'perfect' Personalized Learning Environment

ARV GCP3: Rich-Media Assignments

ARV GC Recommen Le

Delphi GCP3: Acquisition of graphical and digital literacies through teaching with ICTs

ARV GCP9: Improving Educational Practices through Data-supported Information Systems

ARV Tec

ARV GCP7: Assessment and Automated Feedback

ARV GCP8: One Informed Tutor per Child

Delphi GCP 4: Increasing student motivation to learn nd engaging the disengaged

ARV GCP14: Technology for Young Children's Expression of Scientific Ideas

ARV GCP16: Engaging the Brain's Reward System

Delphi GCP5: Bridging informal and formal contexts to create a unified learning landscape

ARV GCP1 Inform

Centre for Learning Sciences and Te

ARV GCP1: Open Collaboration in Formal Education

ARV GCP18: New Forms of Assessment for Social TEL Environments

What is your Grand Challenge Problem?

What problems of the European education system are addressed, and what are the long term benefits for society?

What are the main activities to address this Grand Challenge Problem?

What is the timeframe for the Grand Challenge Problem?

What are measurable progress and success indicators?

How can funding be attracted?

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